

No. 635,480.

Patented Oct. 24, 1899.

H. HEINRICH.
GRAIN SCOURER.

(Application filed July 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.

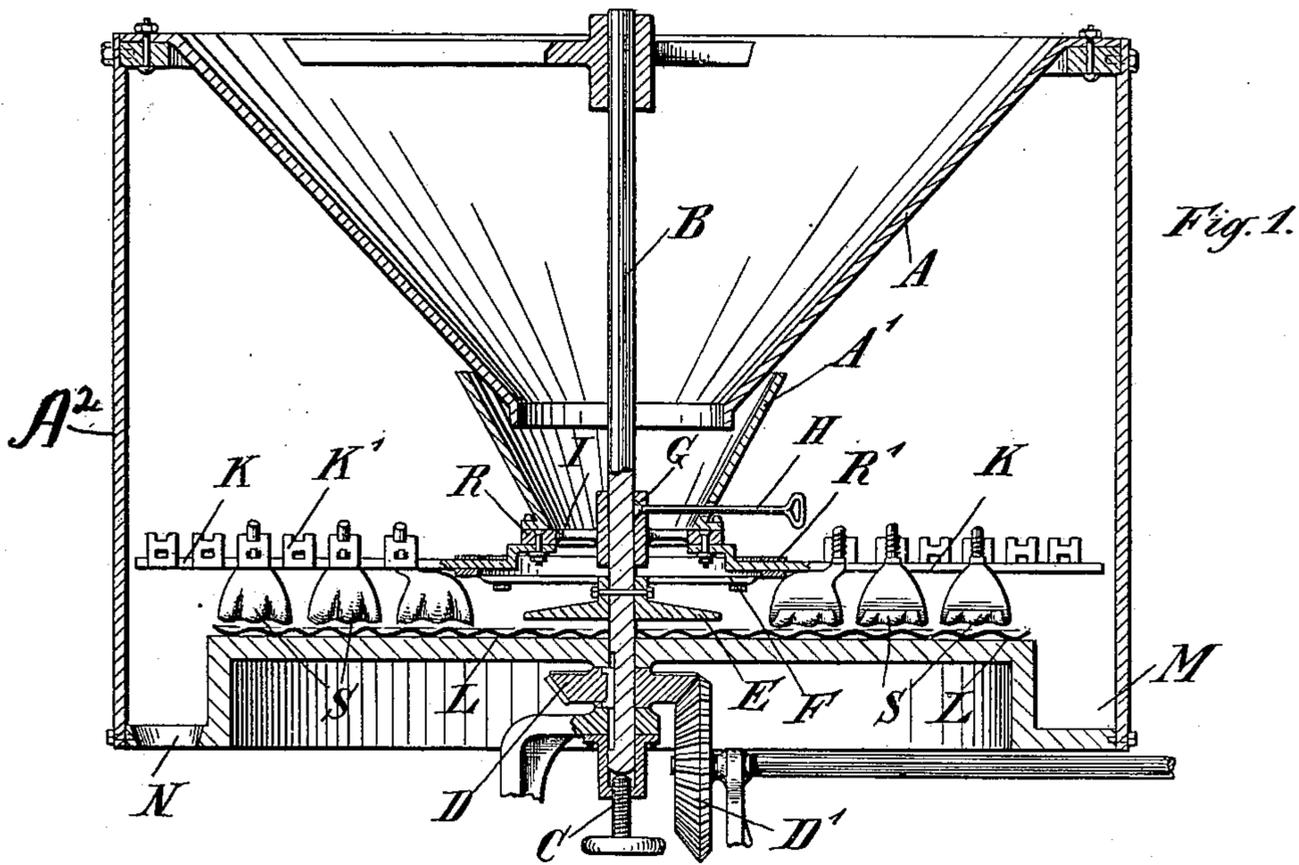


Fig. 1.

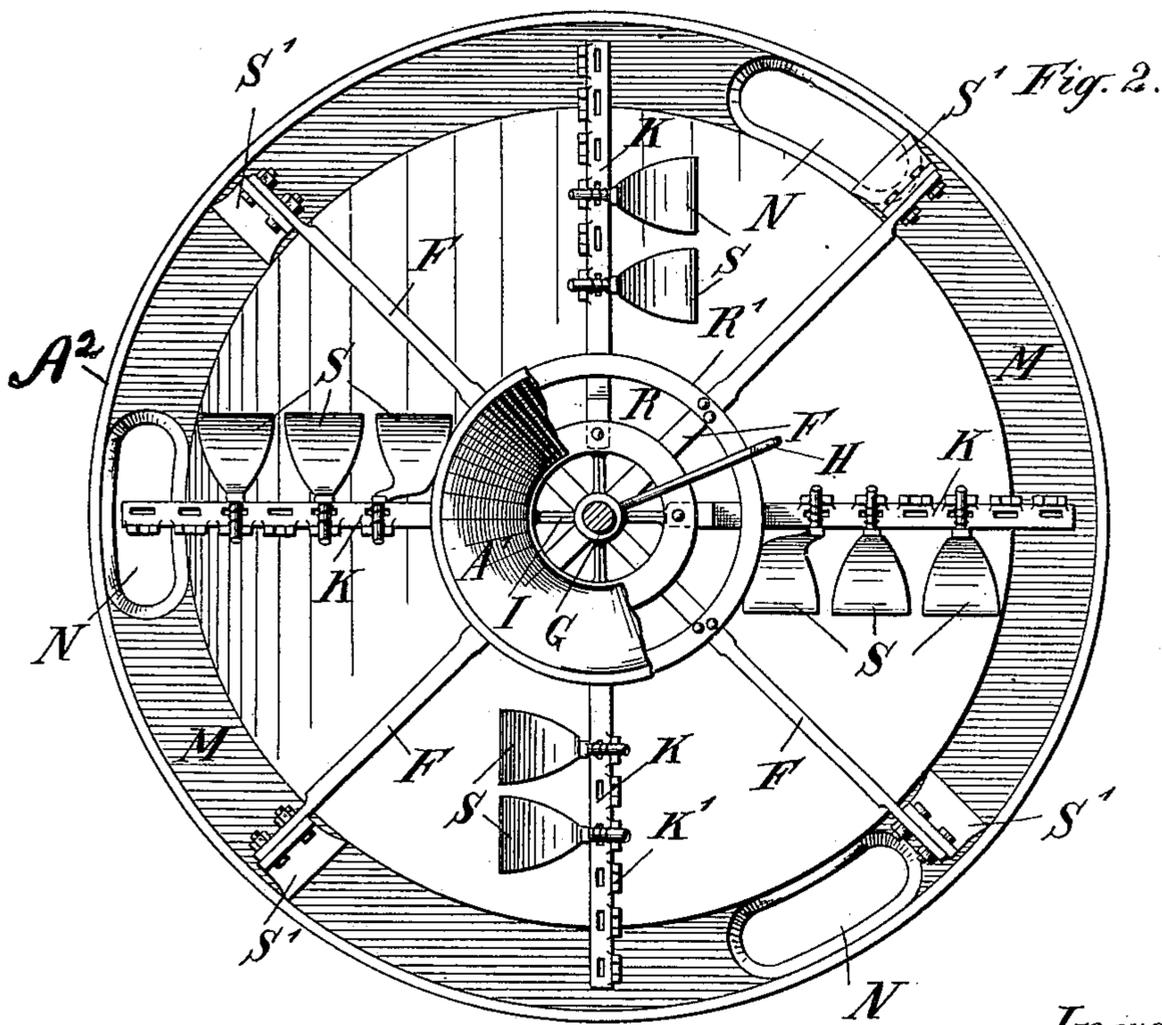


Fig. 2.

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2 Sheets—Sheet 2.

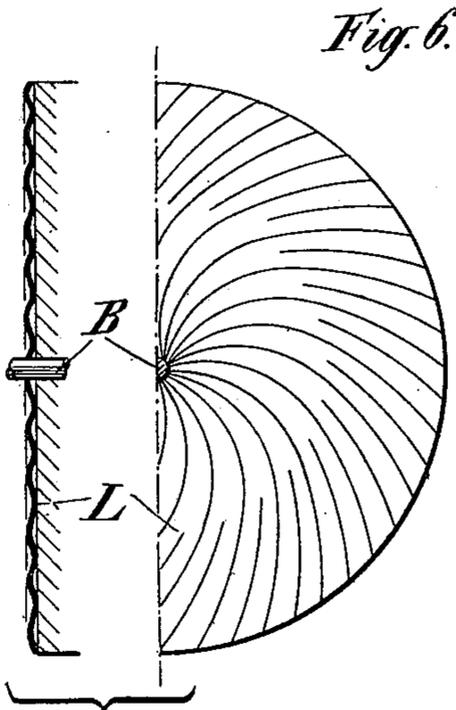


Fig. 6.

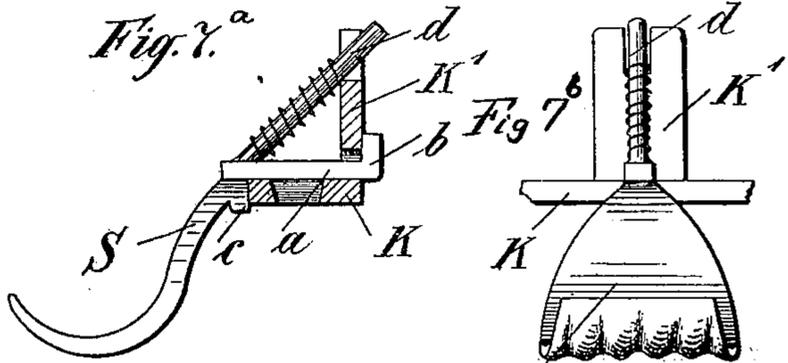


Fig. 7^a

Fig. 7^b

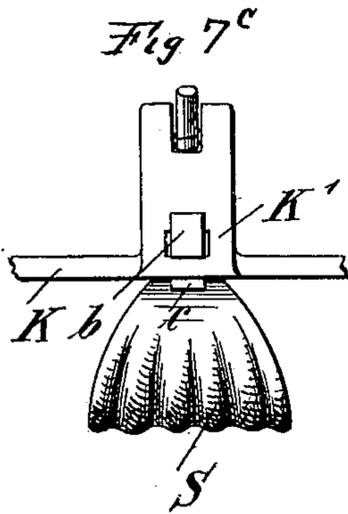


Fig. 7^c

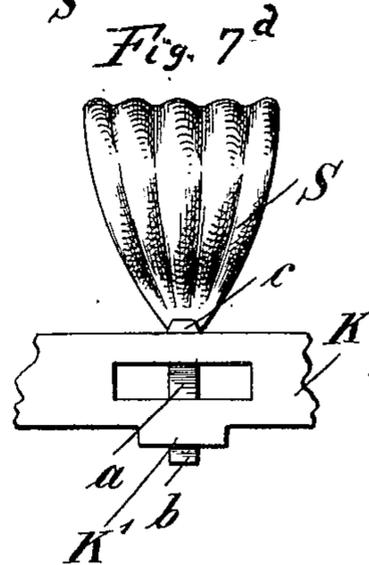


Fig. 7^d

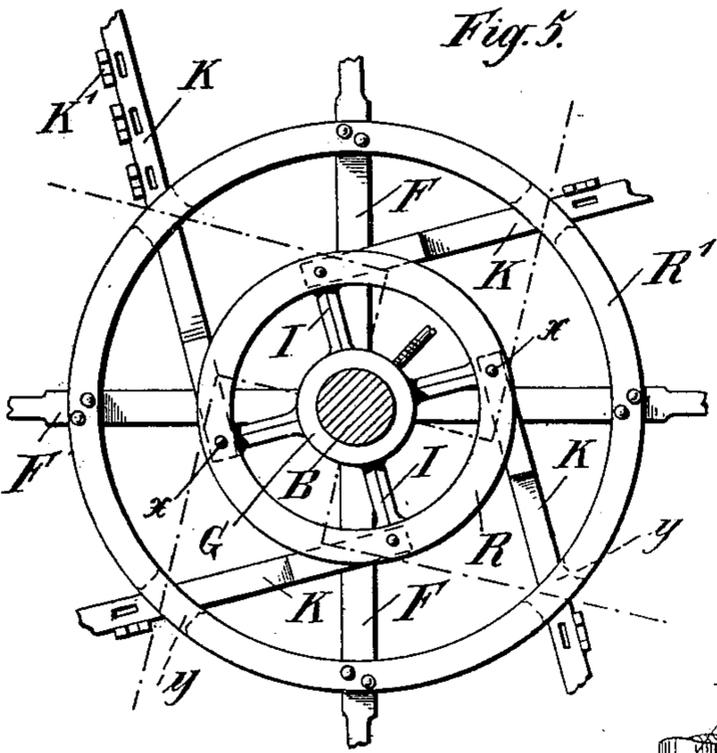


Fig. 5.

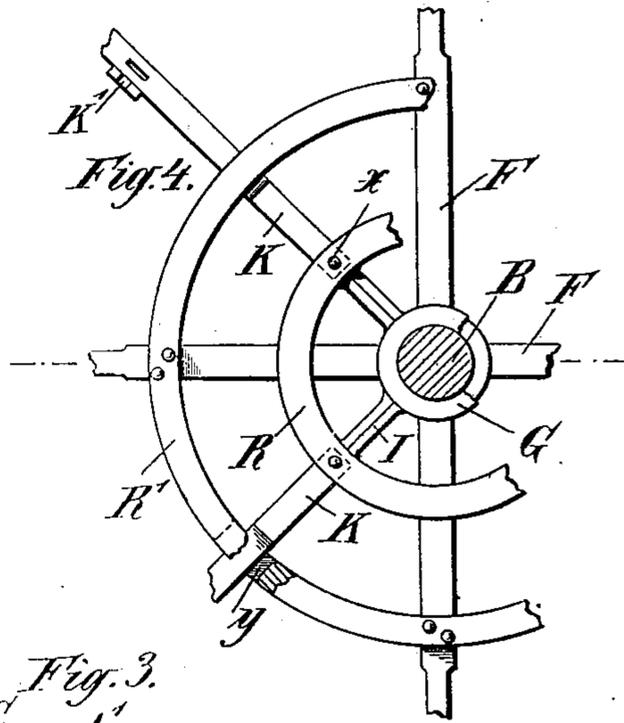


Fig. 4.

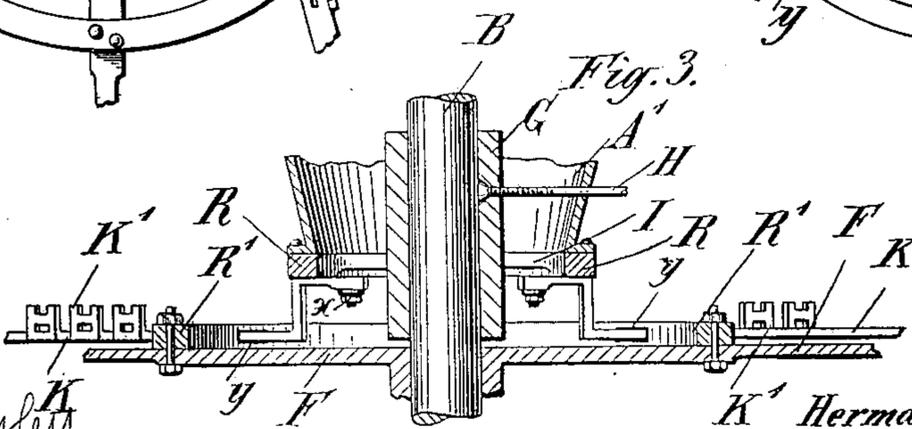


Fig. 3.

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UNITED STATES PATENT OFFICE.

HERMANN HEINRICH, OF DÖLLNITZ, GERMANY.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 635,480, dated October 24, 1899.

Application filed July 30, 1898. Serial No. 687,352. (No model.)

To all whom it may concern:

Be it known that I, HERMANN HEINRICH, a citizen of the Kingdom of Prussia, and a resident of Döllnitz, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Grain-Scourers, of which the following is a specification.

My invention relates to grain-scouring machines, and particularly to such destined for peeling such kind of grain which must not be injured.

In the accompanying drawings the machine as described in the following lines is clearly shown.

Figure 1 shows the machine in vertical section. Fig. 2 is a plan of same. Fig. 3 represents the hub of the revolving arms on an enlarged scale. Fig. 4 shows the same in plan view; Fig. 5, the same part, the arms swung into another position. Fig. 6 is a plan of the corrugated bottom and a section through the same. Fig. 7^a is a detail view of the scraper in action. Fig. 7^b is a similar view from the front. Fig. 7^c is a back view, and Fig. 7^d is a bottom view.

In the center of a hopper A, secured in the casing A², is situated a vertical shaft B, which by means of its lower journal may be lowered or raised at will by means of the screw C. A bevel-gear D D', which may be arranged above or below the machine, imparts the movement to the shaft. Instead of the bevel-gear a belt or rope transmission may be used to the same effect. Immediately above the bottom of the machine there is a distributing-plate E, fixed to the shaft B. A little farther up there is a hub G, with arms I, put over the shaft B. By means of a screw H it may be clamped to the shaft. The ends of the arms I bear a ring R. On the arms the funnel A' is fixed. The bottom of the machine is provided with an annular channel M at its circumference, in which are provided openings N. Immediately above the distributor E arms F are fixed to the shaft B, extending toward the circumference of the machine. At their ends they bear the scrapers S', which transport the grain into the openings N. Near the shaft and concentric to it there is a ring R'. Fixed to the inner ring R and swinging on bolts x are the horizontal arms K. They rest in notches y of the

ring R' and extend to near the circumference of the machine. To these arms are fixed scrapers S, which, in conjunction with the corrugated bottom, peel the grains.

The bottom L of the machine consists of wood, zinc, porcelain, or similar material. Its surface is provided with corrugations spreading from the center to the periphery in straight or curved lines. The corrugations must be without sharp edges or projections in order to avoid any injuring of the grains. On their front side the arms K have upturned flanges K', forked at their upper end and having a square hole. Opposite the flange the arm is slotted in the manner indicated in Figs. 7^a and 7^d, thereby preventing an accumulation of the grain on the arm, which would prevent the scraper from returning to its proper position.

The scraper is formed by a metallic body of the form shown in Fig. 7^a, having on its under side also longitudinal corrugations with rounded edges. Its upper end terminates in an arm a , corresponding in length to the breadth of the arm K. By means of a tongue b it projects through the opening in the upturned flange of the arm. A second projection c bears against the back side of the arm K. A pin d reaches from the neck of the scraper to the forked end of the flange. It bears a spiral spring which bears against the neck of the scraper and against the forked flange of the arm. This spring tends to hold the scraper down.

The machine acts in the following way: The grain is put into the hopper A. The distributor E spreads it over the bottom and exposes it to the action of the scrapers. The corrugations of the scrapers are in normal position rectangular to the corrugations of the bottom. They grasp the grains and press them slightly, revolving them at the same time on their proper axis. Neither the corrugations of the bottom nor of the scraper having sharp edges, the grains cannot be damaged; but they are perfectly peeled. The radial or curved corrugations of the bottom, in conjunction with the corrugations of the scrapers and the centrifugal force, transport the grains from the center to the periphery. The velocity with which this transportation takes place may be influenced by inclining the arms K more or

less forward or backward against the radius of the machine. If their outer ends follow the inner ones, as shown in Fig. 5, the front sides of the scrapers are turned toward the periphery. The transporting of the grain therefore takes place more quickly than if the front sides were turned toward the center, as indicated in Fig. 5 by dotted lines. The position of the arms is regulated by means of the sleeve G and of the ring R, which is fixed to it. The clamp-screw H is loosened, the sleeve C is given a turn to one side or the other, and the ends of the arms which are fixed to the sleeve follow the movement, thereby moving the other ends in opposite direction.

If an accumulation of the grains takes place, they nevertheless will not suffer in any way, because the scraper in this case will be lifted and pass over the obstacle. The num-

ber of scrapers fixed to each arm may be increased or decreased at will.

What I claim as my invention is—

In a grain-scourer, the combination with the stationary horizontal bed and vertical driving-shaft, of a ring rigidly connected with said shaft, a plurality of arms pivotally connected with said ring and movable in a plane parallel to the bed, a second ring or collar adjustably mounted on the shaft and having pivotal connection with said arms, and scrapers yieldingly carried by said arms, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HERMANN HEINRICH.

Witnesses:

HENRY HASPER,
C. H. DAY.